

# CATS

CAPITOL AREA TIMEX/SINCLAIR  
USERS GROUP :Formerly  
Prince George's  
Timex/Sinclair User's Group

# NEWSLETTER



Vol. 4, No. 7  
October 1986

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## PRESIDENTIAL RAMBLINGS

Many pardons for not being able to make the September meeting, but all is well again. Or, was it that I was under the impression that once you become top ranking officer, you are not required to come to anymore meetings?

I give my belated thanks to Dave Rothman, who came to the August meeting and turned all of us on to the latest and greatest games from England. He also had with him the latest assortment of Spectrum punk rock audio too.

Dave is coming back this month to give a talk about CompuServe. (He promises to leave the punk rock at home this time.) We are hoping to have a real live connection too! (We already have a few live wires.)

A quick note to Austin White - You did not send the screen dump in your letter, so I am not sure what your problem is. Try setting your printers' linefeed to  $\frac{1}{e}$  instead of  $\frac{1}{\epsilon}$  to stop the broken copy.

Again I ask for input into what you would like to have the morning session become. The hardware aspect of the time slot has been reasonably small of late. Most time has been devoted to applications and system integration (or, getting everything to work together). NOW is the time to get a consensus on a new direction. Mentioned choices have included operating systems tutorials, Hot Z applications, communications, graphics and more hardware acquisitions.

In light of the QL kit purchase, I hope everyone takes a second look at what this machine is capable of, and most importantly, what this advanced operating system can teach YOU!

I'll be leaving after the meeting to go visit Jerry Chamkis at Aerco. If anyone would like to convey a message, I'll act as a personal courier.

*Tom Bent*

# SCLD Status

# Sept. Meeting Items

MARK FISHER, at the September meeting, explained - in high resolution detail - the current status of CATS' Great SCLD Purchase.

Some other items discussed at the September CATS meeting included:

To all of us, SCLD stands for "Sinclair Committed Logic Diablo". It is not a CPU (central processing unit) chip, but works in conjunction with the Z-80A CPU chip to make the computer work. If the CPU is thought of as the president, then the SCLD is the equivalent of the executive secretary.

1. The MARYLAND HAM AND COMPUTER FEST at the Howard County Fairgrounds July 27.. Phil Russo described at length what was on display at the most recent of these ham fests. He said it has become one of the biggest such events on the East coast, and oriented more and more to the home computer enthusiast..

A majority of the incorrect chips delivered earlier have been returned to Portugal in two reasonably-sized batches to simplify customs processing on both ends. The chips that were returned, by the way, were correct for the TC2068. The replacement chips are for use exclusively in the US version of the TS2068 computer.

2. DICK PARKER and his discussion of the article in the Scientific American on computer-generated patterns. Mark Fisher added a discussion about the similarities between the patterns in the Scientific American article and in the patterns produced by the Mandelbrot algorithm, which he has been writing about for sometime in the CATS newsletter.

The current hitch involves a misunderstanding by Portugese customs over whether the chips we sent to Portugal were sold to Timex Portugal or were being exchanged at no charge. Mark has sent off a message that they are being exchanged.

3. FIDO--has anybody had any recent experience with this free bulletin board? Nobody at the meeting seemed to have.

The correct sockets for the SCLD chips are now available from our old friend and faithful advertiser BILL ALLEN at ELECTRONICS PLUS in North College Park, just south of the Beltway on Route 1 (Baltimore Boulevard).

4. The TINY BOARD--does it still exist?

The sockets retail for \$13.75 or so. The final cost of the SCLD's will be determined when all the cost factors going into this international sortie have been assembled and analyzed.

5. JOHN RILEY mentioned he has been trying the Sinclair conference on COMPUSERVE which happens Wednesday evenings after 10 p.m. Following the COMPUSERVE logon, the command is

A presentation at an upcoming CATS meeting will be devoted to techniques and tricks used in getting the old SCLD off the motherboard without destroying everything in sight.

! GO CLUB . A menu then comes up listing the various organizations using COMPUSERVE in this way. At \$6/hour for COMPUSERVE, it is a fairly inexpensive form of entertainment.

WATCH THIS SPACE !!!!!

H.D.

## Contributors

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	Bob Curnutt
Corresp Secy.	Mike Cohen

Tom Bent  
 Hank Dickson  
 Mark Fisher  
 John Rieley  
 Solomon & Rosenblueth

## Deadlines

Newsletter	Meeting
	October 11
October 24	November 8
November 26	December 13
December 22	January 10

## From the Editor

### First of all!!

I need articles from the members! This newsletter only exists to help its members share knowledge. That means YOU telling the rest of us what you've discovered. Is that last game a real turkey? Did you find a more elegant way to write programs? Have you finally realized how to make the MODEM work? TELL US ABOUT IT! End Sermon.

"May you live in interesting times."

As Hank has so ably described, the SCLD order is still hanging fire. Since he wrote his piece, I've fired off another letter to TMX Portugal (with copies of all previous correspondence) asking about the current status of this purchase. No response yet, of course.

There has been one order for the PAL chip version, which I have not filled, pending permission from TMX Portugal to exchange less than 100 pieces. Their check has not been deposited.

The two members that loaned CATS the money to purchase these chips deserve our continued appreciation. If CATS treasury money had been used directly for the purchase, we would not be able to bring you this newsletter this month. Thank you for your trust and patience.

And another project.... A QL Kit!

Imagine a 68000 based machine selling for less than a TS1000 did a few years ago! This may be a reality for CATS and several "allied" Users Groups: A+ has circulated an offer to Users Groups for a QL Kit. Exact details of what is being offered and cost have varied with the User Group, between \$110 and \$140 (final cost would have to include \$10 or so for shipping). Tom Bent would like to devote several hardware sessions to building the kit - but that can only happen if the members choose to get involved.

I have spoken to Nazir Pashtoon, of the L.I.S.T. group. He would like to assemble a group buy of the QL kits to get the best possible price. Doug Dewey, of the Triangle TSUG, has volunteered to coordinate the order. They propose to 1) assemble a firm list of purchasers, without collecting money, 2) get a clear commitment from A+ as to what is offered for how much money, and 3) collect the money, make the order, and sub-ship the kits.

This was discussed, in part, at the September meeting. At that time, four members signed up. Their names have been forwarded to Doug Dewey. If any members that were not at the meeting would like to get in on this fantastic opportunity, contact Doug Dewey, at (919) 929-3079. As soon as possible.

So, dust off that computer and GET DIGITAL!

## Door Prizes Resume

Door prizes will again be a part of the agenda of the monthly CATS meeting, according to President Tom Bent.

All that will be needed to make this pleasant feature of the regular gatherings come to life again is a goodly supply of small hardware and software items which members are willing to share with others.

Software for any of the Timex/Sinclair family always make popular items, as do small gadgets often so dear to the home computer enthusiast.

Timex/Sinclair books of any kind are also popular and useful items.

If you would like to participate in this enjoyable exchange, bring your offerings to Secretary Ruth Fegley's table at the beginning of the meeting. The sign-up sheet for attendees will be used in conjunction with Mark Fisher's astounding algorithm to select the winners before the end of the meeting.

Come and enjoy this special game!! Mark guarantees that nobody will be permitted to win their own prizes back!!

H.D.

## 2068 Library to Grow

JOHN RILEY has assumed responsibility for leading the collective effort being mounted to produce a CATS LIBRARY TAPE for the T/S 2068 computer.

He solicits the help and assistance of the CATS membership in compiling the best of the publicly-available T/S 2068 software which is either attributable to the members or used most often by them.

The result should be a cassette filled with nothing winners and favorites which CATS will be able to distribute, at cost, during local and national computer festivals and events.

Bring your ideas to any of the upcoming CATS meetings and share them with John Riley. With your help and your contributions, the cassette should prove to be a smashing success!! H.D.

## CATS 2068 PROGRAM CATALOG

2068 owners -- how would you like to add over 60 new programs to your collection? You can do it by obtaining your own copies of the CATS 2068 program library. The library has been in existence for some time, but has just now been organized. The following is a catalog of the programs currently available, as well as a short description of each. And there are more to come! I do not yet have access to one of the library's original tapes, and hope to add it to the catalog in next month's newsletter. I am also sending out an offer to Sinclair users on Compuserve, saying that if they will send me an original or public domain program that is not currently in our catalog, I will send them a volume of our current library for just the cost of postage.

I anticipate that this will generate a number of new programs for our own use. Additionally, I hope that YOU will dig through your own software collection and see if there isn't something that you can give to the library.

Here is some good news for ROMSWITCH owners. After the listing of the 2068 catalog you will find the beginnings of a Spectrum catalog. It is short right now -- just two games and a utility. But there is no reason why it can't grow! I know that many of you buy the British magazines that support the Spectrum. If you have ever typed in a program from one of those magazines that uses Spectrum machine code, it is fair game for inclusion in this public domain catalog! I have a backlog of such listings just waiting for time to type them in. Maybe some of you with some spare time (!) would like to do this. Give me a call at (301) 674-8560 and I'll be glad to lay one of these on you. But now for the catalogs.....

## \*\*\*Volume One --- Games

DATE -- A pseudo-dating service program. Purports to match you up with your ideal mate, but why does it tend to be Attila the Hun? Fun to use at Valentines Day parties.

SAILING -- An interesting little simulation game by our own Mark Fisher.

TRAIN -- Novel use of sound and graphics in this little program. Good train wreck!

KENO -- A computer adaptation, we are told, of an ancient Chinese betting game.

SPACEWAR -- Another Mark Fisher creation. We are invited to blow the opposition to dust with proximity bombs. Not just a shoot-em-up, though.

TAG -- A frustrating game in which we are to get a reluctant colored square to go where we want it.

EGG SAVIOR -- Arcade style. Rescue the eggs from nasty laser guns.

HUNCHY -- Arcade in which you are the Hunchback of Notre Dame. Rescue Esmerelda!

STAR TREK -- The CLASSIC game that everyone used to sneak onto the mainframes at college in the days of yore.

BRICK-YARD BILL -- Arcade-style, help Bill stack bricks without hemming himself in. Quite difficult.

BRIDGE -- Build a bridge by dropping sections from a helicopter before a blind man can fall into the river.

TWISTS -- Restore a 4x4 Rubic's Cube face to its original configuration before the time runs out. Very challenging.

MINOTAUR -- Find the exit to a maze, collecting invisible objects along the way, before the Minotaur gets you!

DEATHRACE -- Run down innocent pedestrians with your race car. Cute little tombstones mark the scene of their demise.

BREAKOUT -- A Basic version of the classic Atari game.

ANGELS -- A space-invaders arcade game.

MOONLANDER -- Land your lander safely on the Moon. I went "SPLAT" every time.

\*\*\*Volume 2 --- Educational & Utilities

SPANISH TUTOR -- self-explanatory.

GEOGRAPHY -- An unfinished states and capitals program. Someone fill it out, please!

COLOR PLOT -- A drawing program aimed at children's use.

COLOR DOODLE -- A variation on the above program that makes blockier pictures.

DRAW -- A more sophisticated drawing program.

SPECDRAW -- An even more sophisticated graphics program, featuring 18 sizes of text, fill, four-point banding and more. You really need a keyboard overlay for this one!

PIXFIX -- The winner of the Syncware News contest for graphics software. Gives you pixel by pixel control of the screen.

WOLVERINE -- A sample picture drawn on PixFix.

RANDOM FAN -- Pretty!

PIE CHART -- Makes pie charts from data you supply.

3D SHAPE -- Draws 'em.

BARChart -- Generates a barchart from your data.

HEADLINE and BANNER -- Both of these generate large-size words running side-ways on a 2040 printer.

EDITOR -- A utility for creating user-defined graphics.

UDG -- Does the same as the program above, with a slightly different approach.

CHARACTERS -- Throws the 2068 character set onto an 8x8 grid, and gives the numerical value of each line of pixels.

64 COLUMN -- A basic program that shifts the 2068 into 64-column mode. Too slow to be useful, but it is educational.

\*\*\* Volume 3 --- More Utilities

HEADSCAN -- A header-reader program that is a must for anyone who wants to transfer multi-load programs to another tape or disk format.

SCANNER -- A very interesting program that takes an audio input from the MIC jack and gives a running graphic reading of it.

VIDEOFILE -- A computerized filing system for your videotape library.

TAPESCHED -- Computerizes your weekly videotaping schedule.

BANKREC -- a computer checkbook balancing program.

LISTS -- Simply the best public domain data base that I know of for the 2068. The only way to beat it is to buy ProFile.

FORMULARY -- A darkroom-chemistry mixing guide for photographers who do their own developing.

FIRSTLOAD -- the mc program that translates TS1000 programs into 2068 programs.

MCLOADER -- A simple mc loader.

BOLD -- Redefines the 2068 character set into fatter letters and symbols. A 2040 printer will then print them that way.

FLIP -- Rotates a screen 90 degrees every time you press the button!

CRYPTO -- Creates a simple substitution cypher that you define.

HEX -- a hexadecimal loader.

HEXSPEC -- a Spectrum hex loader. I s'pose it would work with a 2068 too.

TOMORROW -- a primitive word processor that has a nice personality.

INTERPOLATE -- interpolates a graph from the data you supply.

\*\*\*\*\* NOTE \*\*\*\*\* THE NEXT THREE PROGRAMS ARE SOME OF JACK DOHANEY'S FAIRWARE. IT IS GOOD STUFF!! I URGE YOU IF YOU FIND YOURSELF USING THESE TO SEND A FEW DOLLARS TO JACK IN GRATITUDE FOR DOING THESE THINGS FOR US.

EXTENDED BASIC -- Adds nine new commands to our standard basic, which significantly enhance the 2068's sound and animation facilities.

KEYWORD -- Disables the single-stroke keyword system and allow one to type in Basic commands directly from the keyboard, just like the Other Guys computers.

TOOLKIT -- a programmer's utility which includes Remember, Remkill, and a Compactor.

THE SPECTRUM CATALOG !! (SHORT & SWEET)

ANIMATE -- a graphics utility which generates a 3D picture from your 1D bisection, rotates and recreates this picture 8 times, and then pages these pictures sequentially to achieve a spinning animation effect.

GALACTOIDS -- A space-invader type of game that is fast, furious, and infuriatingly difficult.

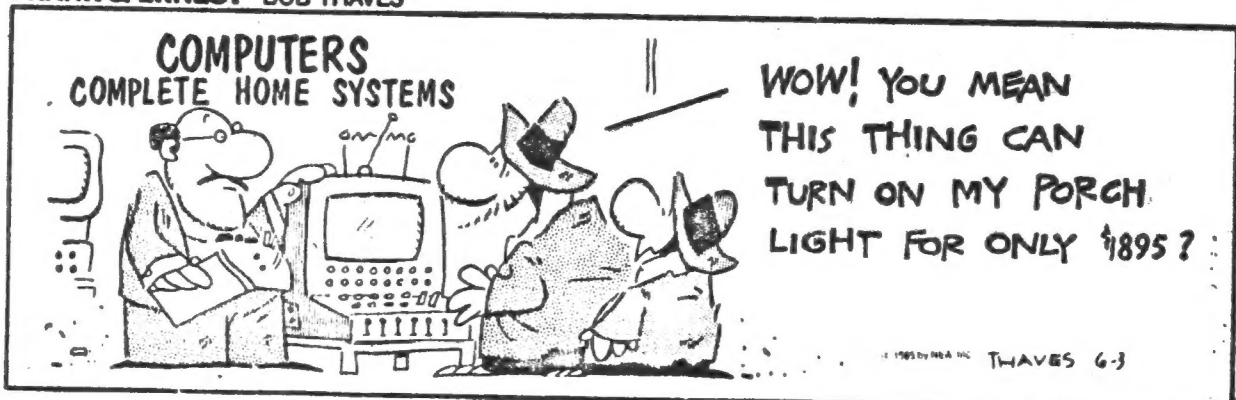
BLOCKMAN -- A more sedate but still challenging arcade game that features horizontal scrolling of subsets of the game board.

As you can see, this is a rather substantial library already, and there is still more to come! I believe that even beyond the one CATS tape I still do not have, however, there is a great deal of software within the collections of our members that they have written themselves or have adapted out of another machine or typed in from a magazine listing. So how about donating some of your noncommercial treasures? The result will be enriching to us all. Call me at the number listed above, or post me some mail at Compuserve. My CIS number is 73317,3526.

You can obtain your own copy of the library for just the cost of the tapes. A sign-up sheet will be passed around at this month's meeting or you can give me a call.

John Riley

FRANK & ERNEST BOB THAVES



READ/DATA : PART TWO\*\*\*\*\*

The most common item of feedback I've gotten from last month's newsletter has been 'Why does READ/DATA exist?'. I'll cover a bit of that territory, and then get back to the actual code.

Another basic question is; 'My computer doesn't have READ/DATA. So why should I care what other machines use it for?' The answer is that there are three times you may want to use this knowledge. 1) If you are in a general computer class, your assignments almost certainly will include READ/DATA. A deeper understanding will allow you to move between computers, increasing your skill as you go. 2) If you are translating programs from the wealth of examples available, you will need to develop a way to do the same job, using the T/S's abilities. 3) If you are writing a program, and wish it to be as bombproof as possible, you may use READ/DATA subroutines to ensure that important variables are not accidentally erased by RUN.

WHY IS READ / DATA ?

Computers use four categories of information. They are:

- 1) The program; the sequence of commands to be followed.
- 2) The constants; numeric values that will not change in the course of the program.
- 3) The input; raw data to be processed.
- 4) The output; the results of the interaction between the other three elements.

Traditionally, computers have held these four categories in separate areas; in early machines, the four were held in different machines. When one saved the program to tape, the constants, input, and output were left behind. They would be kept as separate files, to be saved and loaded as needed.

On a modern machine, all types of information are held in a common main memory. The only distinction between them are their addresses.

When saving programs, however, most computers still keep the program separate from the other three. The TRS-80 is a case in point. When a program is reloaded, it has to be able to create its own constant, input, and output files. Input and output might be taken from a disk, but the information needed for its constant file must be held in the program, itself: As DATA which is READ into the variables section of main memory.

The T/S 1000 owner is not in the same position. A SAVE command SAVES everything: most of the system variables, the program, the display file, and all variables (including constants, input, and output).

There are two reasons why a READ/DATA mimic would be included in a T/S 1000 program.

- 1) To keep a translated program similar in structure to the original. This would ease translation and debugging.
- 2) To keep constants from being accidentally erased. When a program uses variables, they can be erased if RUN is pressed to restart the program. By including a READ/DATA type subroutine, pressing RUN merely rebuilds the needed variables before using them.

The main reason why a READ/DATA type subroutine would not be used is because of increased RAM requirements. The subroutine itself takes up a sizeable chunk of memory; and each item to be read ends up appearing twice in the main memory--once in the program, and once in the variables. For this reason, 1K and 2K programs will try to minimize all lines that initialize variables (Minotaur is a case in point).

BACK TO THE CODE

Last month, I presented a routine that would take a string, slice it into equal chunks, and turn each chunk into a numeric variable (using VAL).

C.A.T.S. VOL 1, 5 Aug '83

This month, we'll work on slicing D\$ into unequal chunks. As in a 'real' DATA string, commas will separate data elements. The program is in two parts; lines 20, 30, & 40 search for the commas, while 50 peels off what's needed, and 60 discards what's just been used.

```

10 LET D$="12,14,3201.6,MIKE,22"
20 FOR N=1 TO LEN D$
30 IF D$(N)="," THEN GOTO 50
40 NEXT N
50 LET X$=D$( TO N-1)
60 LET D$=D$(N+1 TO )
80 PRINT X$
90 GOTO 20

```

Run it. Works nicely, dosen't it ?

### EXPANDING ON THE IDEA

There is one problem; after the last entry is printed, there is quite a wait before the 5/80 shows up at the bottom of the screen. To stop the program at the end of the data we will add what is called a trailer. This is an extra datum that is added at the end of the string, which signals the program to stop processing this string of data. Add:

```

11 LET D$=D$+" ,XX"
70 IF X$="XX" THEN STOP

```

You may have more than six datum to load--many programs have 30 or 40. In a TRS-80 program, the data would be split among several DATA lines. You can do that too--it makes it easier to edit. Try:

```

11 LET D$=D$+"10,12,14,.003,END,XX"

```

### TURNING IT INTO A SUBROUTINE

We want to be able to use this in a larger program. Most large programs have more than one READ statement; it would be a pain to have to repeat all the code for each occurrence.

First, let's remove lines 10 and 11; they are important, but they are not part of the subroutine.

Use the EDIT function, and change their line numbers to 100 and 110. Change 80 to:

```

80 RETURN

```

and delete 11 and 90. Add a new 100:

```

100 GOTO 100

```

Now we will create a minimum 'main program'. Add:

```

120 FOR I=1 TO 10
130 GOSUB 20
140 PRINT X$
150 NEXT I
160 PRINT "TASK COMPLETED, SIRE"

```

The equivalent Microsoft BASIC program would read:

```

100 DATA 12,14,3201.6,"MIKE",22
110 DATA 10,12,14,.003,"END"
120 FOR I=1 TO 10
130 READ X$
140 PRINT X$
150 NEXT I
160 PRINT "TASK COMPLETED, SIRE"

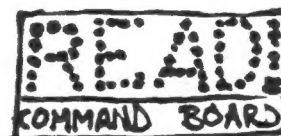
```

In case you got lost among all the EDITing, here's a listing of the program at this point:

```

10 GOTO 100
20 FOR N=1 TO
LEN D$
30 IF D$(N)=","
THEN GOTO 50
40 NEXT N
50 LET X$=D$(
TO N-1)
60 LET D$=D$(N
+1 TO )
70 IF X$="XX"
THEN STOP
80 RETURN
100 LET D$="12,
14,3201.6,MIKE,2
2"
110 LET D$=D$+"
10,12,14,.003,EN
D,XX"
120 FOR I=1 TO
10
130 GOSUB 20
140 PRINT X$
150 NEXT I
160 PRINT "TASK
COMPLETED, SIRE"

```





READ / DATA cont. \*\*\*\*\*

WHY DON'T THINGS STAY SIMPLE ? \*\*\*\*\*

Many programs use a single  
READ to load several arrays at once.

```
1Ø DIM A$(4,8)
2Ø DIM B$(4,6)
3Ø DIM C(4)
4Ø FOR I=1 TO 4
5Ø READ A$(I),B$(I),C(I) ← ← ← ← ←
6Ø NEXT I
7Ø DATA FRANK,BILL,6,BO,AL,38,
HARRY,TOM,16,MARY,SUE,3ØØ
8Ø END
```

A\$ will end up with FRANK,BO,  
HARRY, and MARY; B\$ with BILL,AL,  
TOM, and SUE; C (a numeric array)  
ends up with 6,38,16,3ØØ.

Using the same subroutine,  
here's a 'main program that matches  
that one:

```
1 DIM A$(4,8)
2 DIM B$(4,6)
3 DIM C(4)
```

Subroutine, lines 1Ø to 8Ø goes here.

```
1ØØ LET D$="FRANK,BILL,6,BO,AL,38,
HARRY,TOM,16,MARY,SUE,3ØØ"
11Ø FOR I=1 TO 4
12Ø GOSUB 2Ø
13Ø LET A$(I)=X$
14Ø GOSUB 2Ø
15Ø LET B$(I)=X$
16Ø GOSUB 2Ø
17Ø LET C(I)=VAL X$
18Ø NEXT I
19Ø STOP
```

THE STRAW THAT BROKE THE CAMEL'S....

Sometimes, you will find a  
program that uses immense quantities  
of DATA statements. You may find  
that a well designed INPUT subroutine  
will work with the needs of the  
program better than a strict mimic  
of the original program.

Now, that's a good idea for an  
article. If you've got a good IN-  
PUT routine in one of your programs,  
why not write it up, and share it  
with the rest of us ?

\*\*\*\*\*MARK FISHER\*\*\*\*\*

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CATS 9 October

## Selecting a Programming Language Made Easy

*Daniel Salomon & David Rosenblueth*

Department of Computer Science, University of Waterloo  
Waterloo, Ontario, Canada N2L 3G1

With such a large selection of programming languages it can be difficult to choose one for a particular project. Reading the manuals to evaluate the languages is a time consuming process. On the other hand, most people already have a fairly good idea of how various automobiles compare. So in order to assist those trying to choose a language, we have prepared a chart that matches programming languages with comparable automobiles.

- Assembler — A Formula I race car. Very fast, but difficult to drive and expensive to maintain.
- FORTRAN II — A Model T Ford. Once it was king of the road.
- FORTRAN IV — A Model A Ford.
- FORTRAN 77 — A six-cylinder Ford Fairlane with standard transmission and no seat belts.
- COBOL — A delivery van. It's bulky and ugly, but it does the work.
- BASIC — A second-hand Rambler with a rebuilt engine and patched upholstery. Your dad bought it for you to learn to drive. You'll ditch the car as soon as you can afford a new one.
- PL/I — A Cadillac convertible with automatic transmission, a two-tone paint job, white-wall tires, chrome exhaust pipes, and fuzzy dice hanging in the windshield.
- C — A black Firebird, the all-macho car. Comes with optional seat belts (lint) and optional fuzz buster (escape to assembler).
- ALGOL 60 — An Austin Mini. Boy, that's a small car!
- Pascal — A Volkswagen Beetle. It's small but sturdy. Was once popular with intellectuals.
- Modula II — A Volkswagen Rabbit with a trailer hitch.
- ALGOL 68 — An Aston Martin. An impressive car, but not just anyone can drive it.
- LISP — An electric car. It's simple but slow. Seat belts are not available.
- PROLOG/LUCID — Prototype concept-cars.
- Maple/MACSYMA — All-terrain vehicles.
- FORTH — A go-cart.
- LOGO — A kiddie's replica of a Rolls Royce. Comes with a real engine and a working horn.
- APL — A double-decker bus. It takes rows and columns of passengers to the same place all at the same time. But, it drives only in reverse gear, and is instrumented in Greek.
- Ada — An army-green Mercedes-Benz staff car. Power steering, power brakes and automatic transmission are all standard. No other colors or options are available. If it's good enough for the generals, it's good enough for you. Manufacturing delays due to difficulties reading the design specifications are starting to clear up.

Capitol Area Timex/Sinclair Users' Group  
P.O.Box 725  
Bladensburg, MD 20710

Name \_\_\_\_\_

Address \_\_\_\_\_

ZIP \_\_\_\_\_

Phone Home \_\_\_\_\_ Office \_\_\_\_\_

memberships - \$15.00 (family/individual); make checks payable to C.A.T.S.

If family membership, please list family members participating:

\_\_\_\_\_

Occupation \_\_\_\_\_

Ham Radio call sign \_\_\_\_\_

Equipment

ZX 80 \_\_\_\_\_ RAM size \_\_\_\_\_

KA 80 \_\_\_\_\_ full keyboard \_\_\_\_\_

ZX 51 \_\_\_\_\_ Printer \_\_\_\_\_

IS 1000 \_\_\_\_\_ type \_\_\_\_\_

IS 2000 \_\_\_\_\_ other interface \_\_\_\_\_

Special interest use for computer: ie, games, ham radio interface,  
business, other, etc. \_\_\_\_\_

Languages: Basic \_\_\_\_\_ Other \_\_\_\_\_

Machine \_\_\_\_\_

No. of years computer experience \_\_\_\_\_

What committees would you like to serve on? \_\_\_\_\_

Comments: Where did you hear of C.A.T.S?

-----

Do not write below:

Dt. Pd. \_\_\_\_\_ Amt. \_\_\_\_\_ Membership No. \_\_\_\_\_

Ca. \_\_\_\_\_ Ck. \_\_\_\_\_

Ham Radio Network Information  
 OZK Net... Wednesdays, 9p.m. local time! 14.345 MHz N44F NCS  
 Eastern Regional Sinclair Net... Sundays, 1600 ZI 7.245 MHz  
 K02F NCS

Meetings are held on the second Saturday of each month at 2 P.M. in the large meeting room of the New Carrollton Branch Public Library.

301#922-0767

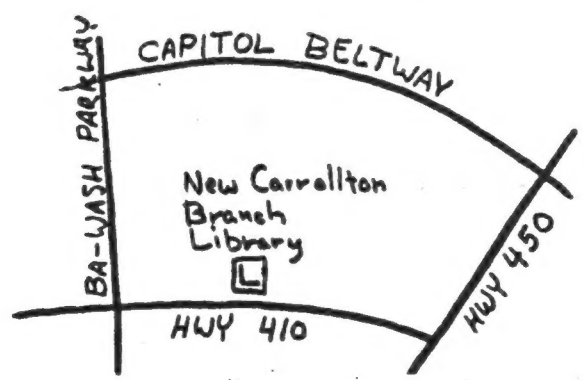
The official contact person for CATS is JULES GESANG!

CATS is a non-profit special interest organization dedicated to serving the interests of those who own, use, or are interested in learning more about the Timex/Sinclair family of personal computers.

P.O. Box 725  
 Bladensburg, MD 20710

The mailing address of the Capitol Area Timex/Sinclair Users' Group is:  
 Capitol Area Timex/Sinclair Users' Group

CATS Newsletter  
 P.O. Box 725  
 Bladensburg MD 20710



COME TO OUR MEETING!  
 The next meeting of C.A.T.S. will be held on:  
 Saturday, October 11, 1986

At: New Carrollton Public Library  
 7414 Riverdale Road (Hwy 410), New Carrollton, MD

IF YOU ARE NOT A MEMBER OF CATS, THIS IS THE ONLY ISSUE YOU WILL RECIEVE  
Dues = \$16.00 per year, per family.

# First Class